

**New Jersey Department of Transportation
Bureau of Research
RESEARCH PROJECT
Request for Proposal
2017/19 Program**

**Date of RFP
09/07/2016**

**Closing Date
10/07/2016**

Calibration/Development of Safety Performance Functions for New Jersey

Project No. 2017-01

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit: <http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>
Revised Proposal Evaluation Forms are available for your information on the website.)

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

A completed Pre-Award Risk Assessment Form A shall be submitted with your proposal.

1 - RESEARCH PROBLEM STATEMENT, BACKGROUND, AND OBJECTIVES

1-1. Purpose. This Request for Proposal (RFP) provides to those interested ("Universities") in submitting proposals for the subject procurement sufficient information to enable them to prepare and submit proposals for the New Jersey Department of Transportation's (NJDOT's) consideration on behalf of the State of New Jersey to satisfy a need for the Project.

1-2. Issuing Office. The Bureau of Research ("Issuing Office") has issued this RFP on behalf of the NJDOT. The sole point of contact in the NJDOT for this RFP shall be the Research Bureau Manager ("Issuing Officer"), Camille Crichton-Summers, Bureau of Research, NJDOT 1035 Parkway Avenue Trenton NJ 08625, Research.Bureau@dot.nj.gov. Please refer all inquiries to the Issuing Officer.

1-3. Scope. This RFP contains instructions governing the requested proposals, including the requirements for the information and material to be included; a description of the service to be provided; requirements which Universities must meet to be eligible for consideration; general evaluation criteria; and other requirements specific to this RFP.

1-4. Problem Statement. The HSM assists users in making data driven decisions on where and how to focus attention and resources to reduce crashes, traffic fatalities, and serious injuries on the NJ roadway system. The current SPF's of the HSM were developed using crash data from a select numbers of states other than New Jersey. New Jersey-specific SPF's need to be developed to adequately represent unique characteristics of crashes for their region (e.g., weather trends, driver population, highway geometric characteristics, animal crashes, varying crash reporting thresholds, etc.) and consequently help to refine predicted safety performance. By calibrating/developing New Jersey-specific SPF's, safety investment decisions will be more cost-effective.

1-5. Type of Contract. It is proposed that if the Issuing Office enters into a contract because of this RFP, it will be a **Cost Reimbursement Based**, contract containing the Standard Contract Terms and Conditions. The Issuing Office, in its sole discretion, may undertake negotiations with a University whose proposals, in the judgment of the Issuing Office, show them to be qualified, responsible, and capable of performing the Project.

1-6. Disadvantaged Business Information. The New Jersey Department of Transportation is committed to providing opportunities for Disadvantaged Business Enterprises to compete for work. To support this commitment, there is a goal of 12.79% of the total contract dollar amount set for this RFP.

It is suggested that you utilize organizations certified by NJDOT's DBE Unified Certification Program (NJ UCP) as listed on the NJDOT webpage.

1-7. Best and Final Offers.

- A. While not required, the Issuing Office reserves the right to conduct discussions with Universities for obtaining "best and final offers." To obtain best and final offers from Universities, the Issuing Office may do one (1) or more of the following, in any combination and order:
 - 1. Schedule oral presentations;
 - 2. Request revised proposals;
 - 3. Enter into pre-selection negotiations.
- B. The Evaluation Criteria found in Part 2, Section 2-4, shall also be used to evaluate the Best and Final offers.

1-8. News Releases. Universities shall not issue news releases, Internet postings, advertisements, or any other public communications pertaining to this Project without prior written approval of the Issuing Office and then only in coordination with the Issuing Office.

1-9. University Representations and Authorizations. By submitting its proposal, each University understands, represents, and acknowledges that:

- A. All of the University's information and representations in the proposal are material and important, and the Issuing Office may rely upon the contents of the proposal in awarding the contract(s). The Department shall treat any misstatement, omission, or misrepresentation as fraudulent concealment of the facts relating to the Proposal submission.
- B. The University has arrived at the price(s) and amounts in its proposal independently and without consultation, communication, or agreement with any other University or potential University unless it's a joint proposal.
- C. The University has not disclosed the price(s), the amount of the proposal, nor the approximate price(s) or amount(s) of its proposal to any other firm or person who is a University or potential University for this RFP. The University shall not disclose any of these items on or before the proposal submission deadline specified in the Calendar of Events of this RFP.
- D. The University has not attempted, nor will it attempt, to induce any firm or person to refrain from submitting a proposal on this contract, or to submit a proposal higher than this proposal, or to submit any intentionally high or noncompetitive proposal or other form of complementary proposal.
- E. The University makes its proposal in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive proposal.
- F. To the best knowledge of the person signing the proposal for the University, the University, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency. The aforementioned representative(s) have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving

conspiracy or collusion with respect to bidding or proposing on any public contract, except as the University has disclosed in its proposal.

- G. To the best of the knowledge of the person signing the proposal for the University and except as the University has otherwise disclosed in its proposal, the University has no outstanding, delinquent obligations to the NJDOT including, but not limited to, any state tax liability not being contested on appeal or other obligation of the University that is owed to the Department.
- H. The University is not currently under suspension or debarment by the NJDOT, any other state or the federal government, and if the University cannot so certify, then it shall submit along with its proposal a written explanation of why it cannot make such certification.
- I. The University has not made, under separate contract with the Issuing Office, any recommendations to the Issuing Office concerning the need for the services described in its proposal or the specifications for the services described in the proposal.

2 - PROPOSAL REQUIREMENTS

2.1. Please visit: <http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf> for the proposal submission requirements. Proposals **shall not** be accepted without fulfilling the requirements in the document.

2-2. Objections and Additions to Contract Terms and Conditions. The University will identify which, if any, of the terms and conditions it would like to negotiate and what additional terms and conditions the University would like to add to the standard contract terms and conditions. The University's failure to make a submission under this paragraph will result in waiving its right to do so later, but the Issuing Office may consider late objections and requests for additions if to do so, in the Issuing Office's sole discretion, would be in the best interest of the Department. The Issuing Office may, in its sole discretion, accept or reject any requested changes to the standard contract terms and conditions.

The University shall not request to completely substitute its own terms and conditions nor request changes to the other provisions of the RFP. All terms and conditions must appear in one (1) integrated contract. The Department reserves the right to select more than one Institution of Higher Education. The Issuing Office will not accept references to the University, or any other, online guides or online terms and conditions contained in any proposal.

Regardless of any objections set out in its proposal, the University must submit its proposal, including the separate sealed cost proposal, based on the terms and conditions of the contract. The Issuing Office will reject any proposal that is conditioned on the negotiation of the terms and conditions set out in the contract or to other provisions of the RFP as specifically identified above.

2-3. Disadvantaged Business Enterprise (DBE) Involvement. Provide detailed information describing the NJDOT DBE Unified Certification Program (NJDOT UCP) certified DBE. Include the business name of the DBE with the address, contact person, phone number, the NJDOT DBE Unified Certification Program (NJDOT UCP) certification number, a detailed narrative of the services to be provided, and the percent of the proposal's total cost to be contractually allocated to the DBE. No cost information can be displayed in the technical proposal.

Physical certification letters and/or expiration dates should not be requested from DBE certified firms. DBE certification does not expire. If no DBE is qualified, available, or willing to participate, the contractor must provide detailed, verifiable information describing the good faith effort made to locate a DBE. If the good faith effort is determined to be unacceptable, the proposal may be disqualified or other action taken.

2-4. Criteria for Selection. Please see the NJDOT Research Process for Review and Evaluation of Proposals at <http://www.state.nj.us/transportation/refdata/research/pdf/researchprocess.pdf>.

3 - WORK STATEMENT

3-1. Research Objectives. The Highway Safety Manual (HSM), published by the American Association of State Highway and Transportation Officials (AASHTO), is a resource that provides safety knowledge and tools for improved decision making based on safety performance. The HSM includes safety predictive methods that can be used to quantitatively estimate the safety of a transportation facility.

In the HSM predictive methods, the total expected crash frequencies for a facility are estimated by combining safety performance functions (SPFs) and crash modification factors (CMFs). First, the SPFs are used to calculate estimated crash frequency for a base condition. Next, the estimates are modified by applying CMFs to address non-base condition characteristics for specific locations. However, the SPF's included in the HSM were developed using crash data from a select numbers of states other than New Jersey. For a jurisdiction to be able to fully benefit from applying the HSM SPFs to their region, it is necessary to calibrate/develop these models for local conditions.

Two approaches for developing "project level" SPFs are to be explored. One approach is to calibrate the predictive models in the HSM using data from a limited number of sites (for each facility type) from New Jersey. The second approach is to develop New Jersey specific SPFs. The second approach is expected to provide more accurate results but will require data from a larger sample of sites, and also involve the application of statistical techniques. Tools, such as FHWA's latest tool, *The Calibrator*, can assist in the decision making process of which approach is to be used for the facility type. New Jersey-specific "project level" safety performance functions (SPFs) are to be calibrated/developed for facility types including, but not limited to, the following:

- a. Rural two-lane roads
- b. Rural four-lane divided roads
- c. Rural four-lane undivided roads
- d. Two lane urban and suburban arterials
- e. Three lane (with center TWLTL) urban and suburban arterials
- f. Four lane divided urban and suburban arterials
- g. Four lane undivided urban and suburban arterials
- h. Five lane (with center TWLTL) urban and suburban arterials
- i. Three-leg minor road stop controlled intersections on rural two lane roads
- j. Four-leg minor road stop controlled intersections on rural two lane roads
- k. Three-leg signalized intersections on rural two lane roads
- l. Four-leg signalized intersections on rural two lane roads
- m. Three-leg minor road stop controlled intersections on rural four lane roads
- n. Four-leg minor road stop controlled intersections on rural four lane roads
- o. Three-leg signalized intersections on rural four lane roads

- p. Four-leg signalized intersections on rural four lane roads
- q. Three-leg minor road stop controlled intersections on urban and suburban arterials
- r. Four-leg minor road stop controlled intersections on urban and suburban arterials
- s. Three-leg signalized intersections on urban and suburban arterials
- t. Four-leg signalized intersections on urban and suburban arterials

3-2. Tasks

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.

PHASE I – Literature Search

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the PI may be asked to make a presentation to the Research Project Selection and Implementation Panel to discuss their findings and to discuss the appropriate research approach.

PHASE II – Research Approach and Anticipated Results

Clear description of how you will solve the problem and implement anticipated findings. Work may be divided into phases (e.g., Laboratory, Field or Year 1, Year 2) as necessary to clarify tasks. *Exit Criteria* must be developed during this phase.

3-3. Implementation and Training Plan

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and as appropriate train these personnel in the use the project results.

The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau. All training shall be provided by licensed personnel on the subject matter. The training hours should count toward PDHs where feasible.

3-4. Emergency Preparedness: To support continuity of operations during an emergency, including a pandemic, the Department needs a strategy for maintaining operations for an extended period. One part of this strategy is to ensure that essential contracts that provide critical business services to the Department have planned for such an emergency and put contingencies in place to provide needed goods and services.

1. Describe how you anticipate such a crisis will affect your operations.
2. Describe your emergency response continuity of operations plan. Please attach a copy of your plan, or at a minimum, summarize how your plan addresses the following aspects of pandemic preparedness:
 - a) Employee training (describe your organization's training plan, and how frequently your plan will be shared with employees).
 - b) Identify key employees (within your organization) and their essential business functions.

- c) Identify contingency plans for:
 - i. How your organization will handle staffing issues when a portion of key employees are incapacitated due to illness.
 - ii. How employees in your organization will carry out the essential functions if contagion control measures prevent them from coming to the primary workplace.
- d) Explain how your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers), etc.
- e) Explain how and when your emergency plan will be tested, and if the plan will be tested by a third party.

3-5. Deliverables

[List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan. A work plan for each task that identifies the work elements of each task, the resources assigned to the task, and the time allotted to each element and the deliverable items to be produced. Where appropriate, a PERT or Gantt chart display should be used to show monthly/ quarterly project, task, and time relationship. Please follow the Figure 1 at a minimum.
- Technical Memorandums on the research objectives listed in 3-1
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required
- Quarterly Reports and Final report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RPSIP member of each presentation, technical memorandum, draft final report, and Final Report (plus 10 copies).
- The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel. The Final Acceptance will be granted upon receipt of ten copies of the approved final report.

3-6. Oral Presentations. Oral presentations are requested as part of this RFP. To schedule your oral presentation with the Bureau of Research, utilize the contact information in Section 5. It is preferred that oral presentations should be completed within 14 days from the Closing Date of this RFP (10/07/2016). They will be held at NJDOT Headquarters in Trenton, NJ, and attended by the Research Customer and members of the Bureau of Research.

4 - CONTRACT TIME

The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions. Please be advised that going forward, new task orders having permissible justification will be allowed no more than one time extension with the advent of 2 CFR 200.

A 24 month time frame would be preferred. However, only the first year's funding will be authorized. Subsequent years may be funded by contract modification on an annual basis, based on appropriation of funds and performance.

5 - CONTACTS

Interested parties shall send all questions related to this RFP to the Research Manager prior to 09/17/2016. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions are to be directed to Camille Crichton-Summers by sending an e-mail to Research.Bureau@dot.nj.gov or by phone (609-530-5966).

A pre-proposal meeting may be scheduled with interested parties upon the request of more than one Institution of Higher Education. **This must be requested on or before 09/17/2016.**

6 - DEADLINE

**Proposals (10 single-bound copies) are due at the NJDOT Bureau of Research
no later than 5:00 p.m. on October 7, 2016**

Authorization to Begin Work: Estimated early February 2017

PROPOSAL DELIVERY INSTRUCTIONS:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:

2017-01 PROPOSAL-NJDOT
New Jersey Department of Transportation
Bureau of Research
1035 Parkway Avenue
Trenton, New Jersey 08625-0600

For U.S. Postal Service mail:

New Jersey Department of Transportation
ATTN: Camille Crichton-Summers
Manager, Bureau of Research
P.O. Box 600
Trenton, New Jersey 08625-0600

PROJECT SCHEDULE (SAMPLE)

[illegible]

Figure 1: Sample Project Schedule

Fee Proposal Breakdown			NJDOT Bureau of Research University Task Order for:														
	Name of Research Study																
	Name of Institution																
			Task 1		Task 2		Task 3		Task 4		Task 5		Task 6				
Name	Title	Hrly Rate	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Total Hrs	Total \$	
Faculty 1	Professor			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
Faculty 2	Associate Professor			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
Graduate Assistant	Supporting Role			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
Total Hours and Direct Labor Cost			0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fringe Benefits:																\$0	
B: Fringe Benefit rates 1	0.00%														\$ -		
B: Fringe Benefit rates 2	0.00%														\$ -		
B: Fringe Benefit rates 3	0.00%														\$ -		
Direct Expenses (Itemize and explain in detail)																	
Supplies		Name all the supplies with unit cost, Quantity, and total cost on a separate sheet															
Travel		Breakdown the travel according to mileage															
Tuition		Breakdown needed for tuition															
Subcontract Expenses																	\$0
Subcontract 1		Subcontractors need to breakdown their budget similar to the prime															
Subcontract 2																	
Total Direct Expenses																	\$0
Indirect Costs/Overhead																	\$0.00
Grand Total																	\$0

Figure 2: Sample Fee Proposal Breakdown